

Records of the genus *Gasterocome* Warren (Geometridae, Ennominae) from the Philippines, with description of one new species

Rikio SATO

2–27–29 Shindori-nishi, Niigata, 950–2036 Japan

Abstract *Gasterocome pannosaria* (Moore) is newly recorded from the Philippines, and a new species, *G. inouei* sp. nov., is described from Mindanao.

Key words *Gasterocome*, Geometridae, Ennominae, new species, new record, Philippines.

The genus *Gasterocome* was established by Warren (1894) for the reception of *Cleora pannosaria* Moore, 1868, from India (Bengal). Later the following three species were added to the genus (Parsons *et al.*, 1999): *conspicuaris* (Leech, 1897) (W. China), *fidoniaria* (Snellen, 1881) (Sulawesi) and *polyspathes* Prout, 1934 (Sri Lanka). However, *conspicuaris* was transferred to the genus *Harutaea* Sato, 2000 (Sato, 2000). *G. pannosaria* (Moore) is widespread in the Oriental region, but it has not been recorded from the Philippines. In this paper *G. pannosaria* is recorded from Islands Luzon, Negros, Palawan and Mindanao in the Philippines, and its allied new species is described from Mindanao.

Unless stated otherwise, all the specimens including the type material recorded in this paper will be deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, Japan.

The following abbreviations are used to indicate the location of specimens. BMH: Bishop Museum, Honolulu. NIAES: National Institute of Agro-Environmental Sciences, Tsukuba. NSMT: National Science Museum, Tokyo. ZFMK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn. ZMC: Zoological Museum, Copenhagen, Denmark.

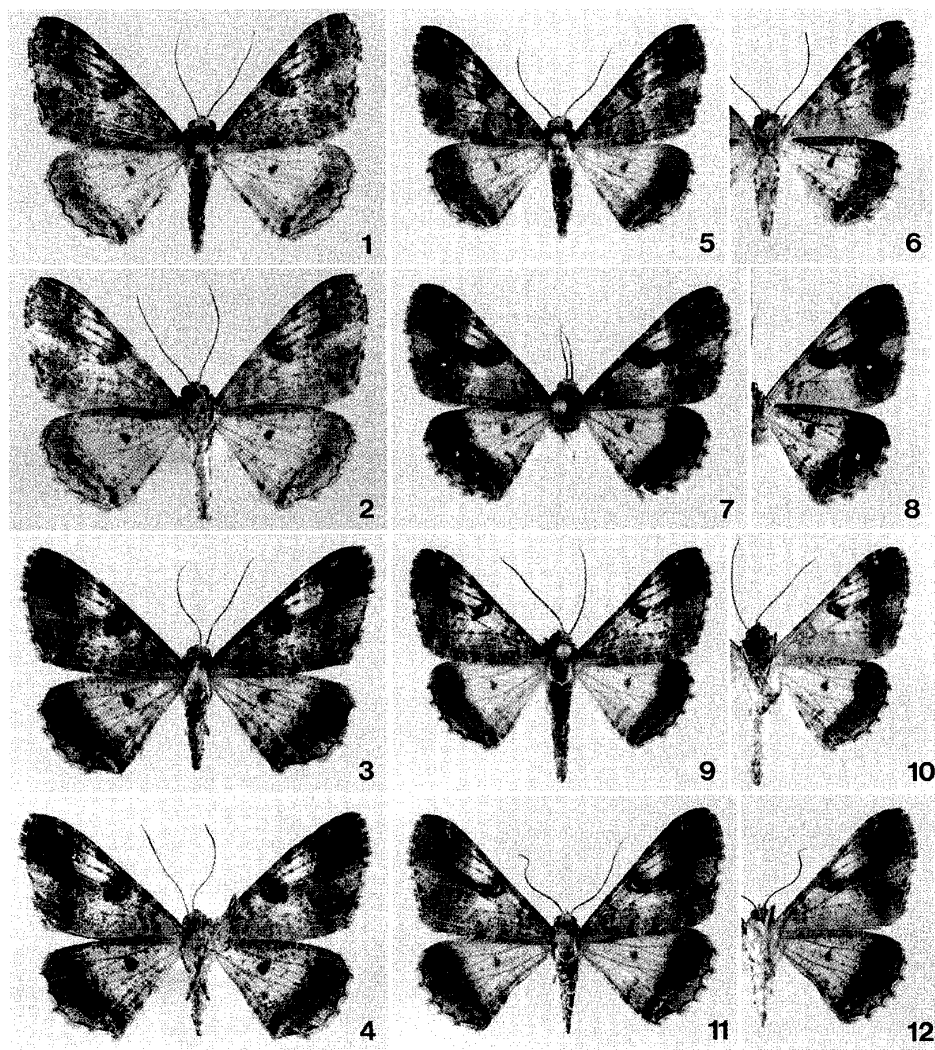
Gasterocome pannosaria (Moore) (Figs 9–12)

Cleora pannosaria Moore, 1868: 629.

Gasterocome pannosaria: Holloway, 1976: 82; 1994: 223.

This species is newly recorded from the Philippines. Besides the nominotypical subspecies, the following four subspecies have been known: *contacta* (Warren) (Java), *macarista* Prout (Borneo), *orta* (Bastelberger) (Taiwan) and *sinicaria* (Leech)(China). No reliable characteristics can be found to distinguish the population of the Philippines from the other subspecies. Therefore, no trinomial name is used for the Philippine population at the present. Male genitalia are shown as in Figs 14, 16, 18 and female genitalia in Figs 20 & 21.

Material examined. Luzon. 1 ♂, Ifugao, Banaway, 28. i. 1986; 2 ♂, *ditto*, 11–12. v. 1986 (native collector); 2 ♂, *ditto* 1,200 m, x. 1988–i. 1989 (T. & F. Vermolen); Ifugao, Mt Pulis 1,700 m, 9–13. ii. 1988 (Cerny & Schintlmeister); 1 ♂, Mountain, Chatol 1,600 m, 24. ix–14. x. 1988 (Cerny & Schintlmeister); 2 ♂, Mountain, Barlig 1,550 m, 17, 19. vii. 1985 (M. Owada), NSMT; 2 ♂ 1 ♀, Mountain, Mt Puguis 1,900 m, 18. vii. 1985 (M. Owada), NSMT; 1 ♂, Benguet, Sayangan 2,300 m, 10. vii. 1985 (M. Owada), NSMT. Negros. 4 ♂, Mt Canlaon, x. 1995 (native collector); 10 ♂ 1 ♀, *ditto* 2,500 m, 26. iv. 1999 (native collector).



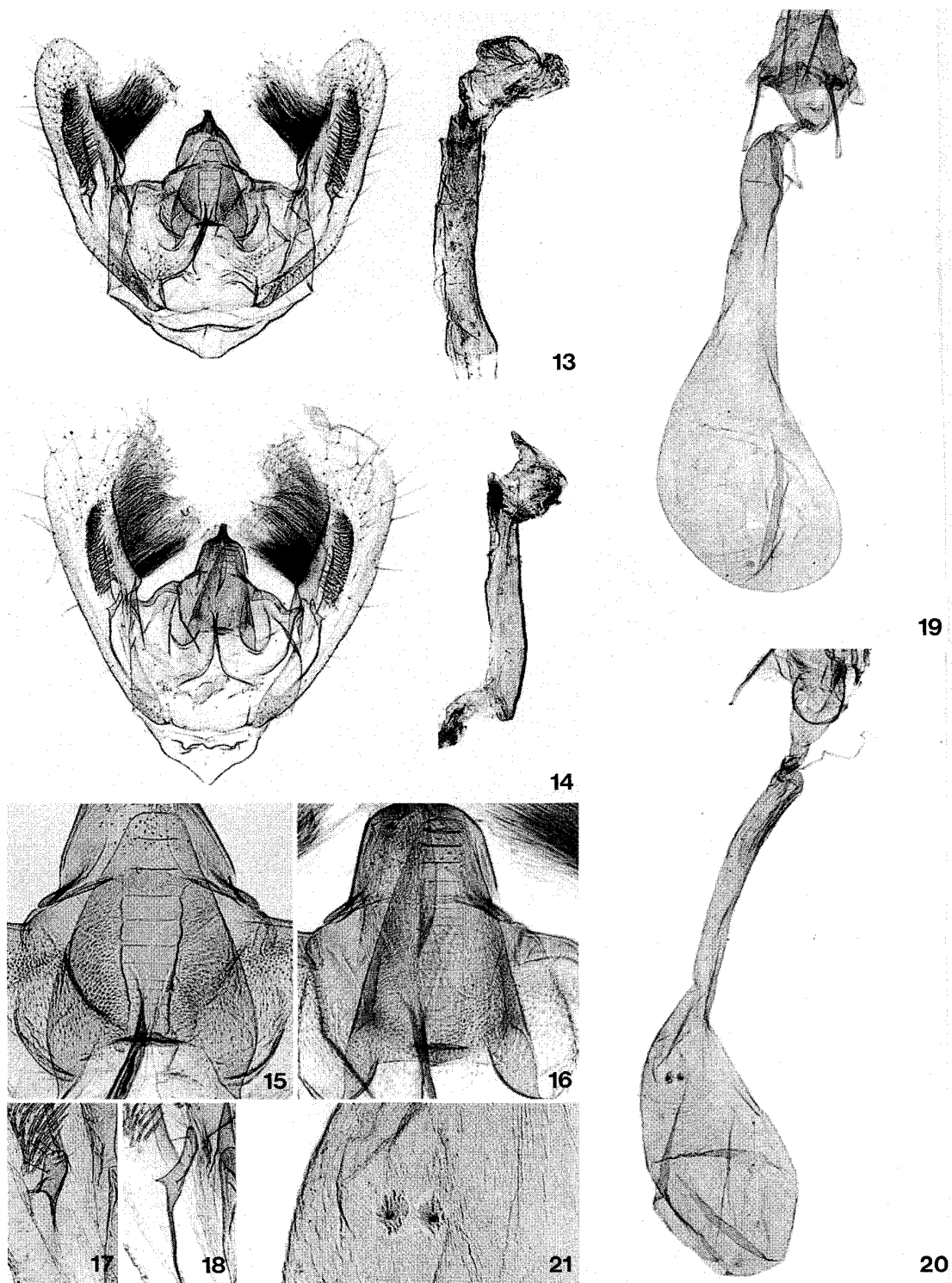
Figs 1-12. *Gasterocome* spp. from Mindanao. 1-8. *G. inouei* sp. nov. 1-2. Holotype, ♂, Mt Dolang-dong. 3-4. Paratype, ♀, Mt Apo. 5-6. Paratype, ♂, Mt Kitanglad. 7-8. Paratype, ♀, Mt Dolang-dong. 9-12. *G. pannosaria* (Moore). 9-10. ♂, Mt Dolang-dong. 11-12. ♀, Mt Apo.

Palawan. 11 ♂ 1 ♀, Mt Mantalingajan 1,000 m, 9-13. iii. 2000 (native collector). 1 ♂, Mantalingajan, Tagembung 1,150 m, 18. ix. 1961, ZMC. Mindanao. 16 ♂, Mt Dolang-dolang 1,500-1,700 m, 2-7. xi. 1999; 5 ♂ 1 ♀, S. E. Mindanao, Mt Apo 1,500-1,800 m, 1-4. xii. 1999; 3 ♂, Bukidnon, Mt Kitanglad, iv. 2000; 4 ♂ 2 ♀, S. Cotabato, Mt Matutum, x. 1995 (native collector); 2 ♂, Davao, Upper Baracatan, Apo Range, Mt Talomo 1,100 m, 17-19. viii. 1985 (M. Owada), NSMT.

Geographical range. Luzon, Negros, Palawan, Mindanao; N. India to Taiwan and Sundaland (Holloway, 1994).

***Gasterocome inouei* sp. nov.** (Figs 1-8)

Similar to *G. pannosaria*, but differing from it by the following characters. Larger in size; length of forewing 18-21 mm and wing span 30-35 mm, while 16-19 mm and 28-32 mm in *pannosaria* (Mindanao population). Compound eye less hairy on surface. Male antenna



Figs 13-21. Genitalia of *Gasterocome* spp. from Mindanao. 13-18. Male genitalia. 13. *G. inouei* sp. nov. RS-6114. 14. *G. pannosaria* (Moore). RS-6116. 15-16. Gnathos, magnified. 15. *G. inouei* sp. nov. 16. *G. pannosaria* (Moore). 17-18. Digitate process from sacculus, magnified. 17. *G. inouei* sp. nov. 18. *G. pannosaria* (Moore). 19-21. Female genitalia. 19. *G. inouei* sp. nov. RS-6113. 20-21. *G. pannosaria* (Moore). RS-6123. 21. Signum, magnified.

ciliated-setose as in *pannosaria*, but sensila longer. Male hindtibia without hair-pencil and third abdominal setal comb lacking, while both well-developed in *pannosaria*. Male abdomen clothed less thickly with long hair below.

Wing colour and maculation basically agreeing with those of *pannosaria*, but less lustrous in colour and less defined in maculation. Hindwing: more densely speckled with brown at proximal third; discocellular spot larger; submarginal band broader and paler in colour. Underside: more densely speckled with brown, hindwing with a larger discocellular spot.

Male genitalia (Figs 13, 15, 18). Similar to those of *pannosaria* (Figs. 14, 16, 18). Triangular gnathos shorter, broader apically; central longitudinal part with fewer number of striae (Fig. 15); valva shorter, not expanded at apex, but slightly swollen; a digitate process from sacculus shorter and stouter (Fig. 17); saccus broader.

Female genitalia (Fig. 19). Similar to those of *pannosaria* (Figs 20, 21), but ductus bursae broader, membranous; signum lacking. Easily distinguished from those of the other congeners by absence of signum. In *pannosaria*, vesica with signum consisting of “two separate bosses adjacent to each other, each with a small spine” (Fig. 21) (Holloway, 1994).

Holotype. ♂, Mindanao. N. W. Mindanao, Mt Dolang-dolang 2,300 m, 10–12. v. 2000 (native collector). Paratypes. 54 ♂ 13 ♀. Mindanao. 8 ♂ 1 ♀, same data as holotype; 13 ♂ 3 ♀, Mt Dolang-dolang 1,500–1,700 m, 2–7. xi. 1999; 2 ♂, Mt Dolang-dolang 1,800 m, 4–9. ii. 2000; 8 ♂ 7 ♀, S. E. Mindanao, Mt Apo 1,500–1,800 m, 1–4. xii. 1999; Mt Apo 2,000 m, 1 ♀, 10–13. viii. 2000; 1 ♀, Mt Apo 1,300 m, 3–9. viii. 2001; 5 ♂, Bukidnon, Mt Kitanglad, iv. 2000; 1 ♂, Mt Busa, x. 1996 (native collector); 1 ♂, Bukidnon, 45 km NW Maramag, Mt Binansilang, 2. x. 1988 (Cerny & Schintlmeister); 3 ♂, Bukidnon, 40 km NW Maramag, Mt Dalongdong 800 m, 1–3. x. 1988 (Cerny & Schintlmeister), ZFMK; 3 ♂, *ditto*, iv. 2000 (Noel Mohagan), *ex coll.* Stefan Nauman, ZFMK; 5 ♂, Bukidnon, 45 km NW Maramag, Mt Binansilang 1,200 m, 18. x. 1988 (Cerny & Schintlmeister), ZFMK; 2 ♂, Caliasan, Kalatungan Mts region, 1,400 m (?), ix. 2000 (native collector), ZFMK; 1 ♂, Davao del Sur. Mt Apo 1,570 m, 10–12. vii. 1996 (R. Brechlin), ZFMK; 2 ♂, Bukidnon, Mt Kitanglad 2,200 m, viii. 1993 (V. Sinjaev), ZFMK; 1 ♂, *ditto* 2,800 m (V. Sinjaev), ZFMK; 1 ♂, Mis. Or., Mt Pomalihi, 21 km W. Gingoog City 800–1,000 m, 17. ix. 1965 (H. M. Torrevillas), BMH.

Geographical range. Mindanao.

Etymology. The specific name is dedicated to Dr Hiroshi Inoue, who has given me invaluable advice and constant encouragement for a long time, in commemoration of his 85th birthday.

I also examined lots of specimens of *G. pannosaria* taken from Mindanao recorded above. This new species was collected simultaneously with *pannosaria* at Mt Dolang-dolang, Mt Apo and Mt Kitanglad.

Acknowledgement

I would like to express my deep gratitude to Dr D. Stüning (ZFMK), for his useful advice to this study and providing the data out of the collection under his care, and to Drs M. Owada (NSMT), O. Karsholt (ZMC) and S. E. Miller (BMH) for their permission to study specimens under their curation. I am grateful to Dr H. Inoue, Prof. Emeritus of Otsuma Women's University, Iruma, for his critical reading of the manuscript. Last but at least, I deeply thank

Mr T. Masui, Takamatsu, for his gift of many specimens, and Dr A. Schintlmeister, Dresden, for his kindness in offering material for this study.

References

- Holloway, J. D., 1976. *Moths of Borneo with special Reference to Mount Kinabalu*. Kuala Lumpur. Malayan Nature Society.
- Holloway, J. D., 1994 (not "1993"). The moths of Borneo: family Geometridae, subfamily Ennominae. [=The Moths of Borneo, Part 11]. *Malay. Nat. J.* **47**: 1-309, pls 1-19, 593 figs.
- Moore, F., 1868. On the lepidopterous insects of Bengal. *Proc. zool. Soc. Lond.* **1867**: 612-688.
- Parsons, M. S., Scoble, M. J., Honey, M. R. & L. M. Pitkin, 1999. In Scoble, M. J. (Ed.), *Geometrid Moths of the World. A Catalogue* (Lepidoptera, Geometridae). 1,016 pp., Index 129 pp. CSIRO Publishing/Apollo Books, Collingwood/Stenstrup.
- Sato, R., 2000. Geometridae: Ennominae (part). In Haruta, T. (Ed.), *Moths of Nepal*, part 6. *Tinea* **16** (Suppl. 1): 15-22, pl. 163.
- Warren, W., 1894. New genera and species of Geometridae. *Novit. zool.* **1**: 366-466.

摘 要

1 新種の記載を含むフィリピン産 *Gasterocome* 属の記録 (シャクガ科エダシャク亜科) (佐藤力夫)

Gasterocome 属は、現在3種からなる小属である。インド (Bengal) から記載された模式種の *G. pannosaria* Moore は、東洋区に広く分布するが、フィリピン諸島から正式に記録されたことはない。本報では、*pannosaria* を Luzon, Negros, Palawan, Mindanao 各島から記録するとともに、Mindanao で *pannosaria* と混棲している近縁種を新種として記載した。

G. inouei Sato (新種)

外観は *pannosaria* と似ているが、♂触角の繊毛がより長いこと、脛節に毛束を欠くことなどで容易に区別される。また、♂交尾器では、gnathos や sacculus から生じる小突起などに明かな違いが認められる。さらに、♀交尾器では、本属に特徴的と考えられていた1対の signum を欠いている。Mindanao 島に固有の可能性が高い。

(Accepted July 10, 2002)